

TO 13 MAY 2005

INTERNATIONAL SEARCH REPORT

10/534696

International application No.

PCT/JP03/14612

**Box I Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)**

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
  
2. ☐ Claims Nos.:  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
  
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

**Box II Observations where unity of invention is lacking (Continuation of item 3 of first sheet)**

This International Searching Authority found multiple inventions in this international application, as follows:

This international application includes four inventions, which does not satisfy the requirement of unity of invention set forth in PCT Rule 13.1-13.4.

Main invention: "Claims 1, 2, 5, 8, 9, and 12," where the invention relates to control of a radiator fan.

Second invention: "Claims 3 and 10," where the invention relates to oil temperature estimation based on motor rotation speed.  
(continued to extra sheet)

1. ☒ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
  
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
  
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
  
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest ☒ The additional search fees were accompanied by the applicant's protest.  
☐ No protest accompanied the payment of additional search fees.

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Continuation of Box No. II of continuation of first sheet (1)

Third invention: "Claims 4 and 11," where the invention relates to oil temperature estimation based on pressure.

Fourth invention: "Claims 6, 7, 13, and 14," where the invention relates to the increase in heat generation of a motor by current phase control.

The inventions from the main to the fourth have a technical feature common to part or the whole of the construction of Claim 1; however, the technical feature is only prior art on the filing date of the international application or on the priority date. As a consequence, the technical feature is not a "special technical feature" within the meaning of PCT Rule 13.2, second sentence.

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## A. CLASSIFICATION OF SUBJECT MATTER

Int.Cl<sup>7</sup> F15B21/04, G01K7/00, H02P6/06

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int.Cl<sup>7</sup> F15B21/04, G01K7/00, H02P6/06

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Jitsuyo Shinan Koho	1926-1996	Toroku Jitsuyo Shinan Koho	1994-2004
Kokai Jitsuyo Shinan Koho	1971-2004	Jitsuyo Shinan Toroku Koho	1996-2004

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	JP 2002-061611 A (Sumitomo Heavy Industries Construction Crane Co., Ltd.), 28 February, 2002 (28.02.02), Full text (Family: none)	1, 2, 5, 8, 9, 12
X	Microfilm of the specification and drawings annexed to the request of Japanese Utility Model Application No. 51741/1984 (Laid-open No. 165558/1985) (Komatsu Ltd.), 02 November, 1985 (02.11.85), Page 4, line 19 to page 5, line 18 (Family: none)	1, 2, 5, 8, 9, 12

☒ Further documents are listed in the continuation of Box C.☐ See patent family annex.

\* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T"

later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X"

document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y"

document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&amp;"

document member of the same patent family

Date of the actual completion of the international search  
01 March, 2004 (01.03.04)Date of mailing of the international search report  
16 March, 2004 (16.03.04)Name and mailing address of the ISA/  
Japanese Patent Office

Authorized officer

Facsimile No.

Telephone No.

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International application No.

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## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	Microfilm of the specification and drawings annexed to the request of Japanese Utility Model Application No. 120925/1977 (Laid-open No. 46990/1979) (Hitachi Zosen Corp.), 31 March, 1979 (31.03.79), Page 3, lines 2 to 10 (Family: none)	1,2,5,8,9,12
Y	JP 9-216782 A (Hitachi, Ltd.), 19 August, 1997 (19.08.97), Par. Nos. [0020] to [0028] (Family: none)	3,10,4,11
A	EP 0479464 A2 (EATON CORP.), 08 April, 1992 (08.04.92), Full text & US 5050451 A & DE 69123920 D1 & JP 4-300458 A	3,10
Y	JP 9-255262 A (Mitsubishi Electric Corp.), 30 September, 1997 (30.09.97), Par. Nos. [0025] to [0027] (Family: none)	6,7,13,14
Y	JP 9-033145 A (Daikin Industries, Ltd.), 07 February, 1997 (07.02.97), Par. Nos. [0046] to [0047] (Family: none)	6,7,13,14
A	JP 63-170571 A (Mitsubishi Electric Corp.), 14 July, 1988 (14.07.88), Full text (Family: none)	6,7,13,14
A	JP 3-158376 A (Mitsubishi Electric Corp.), 08 July, 1991 (08.07.91), Full text (Family: none)	6,7,13,14